#### (12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

# (19) World Intellectual Property Organization International Bureau



### T 1884 BURKER IN BIRNE WAR ONLY BURK BURK BURK IN BRIN BERKER BURK BURK BURK BURK BURK BARK BARK BURK BURK

(43) International Publication Date 27 January 2005 (27.01.2005)

#### **PCT**

## (10) International Publication Number WO 2005/008240 A2

(51) International Patent Classification<sup>7</sup>: G01N 33/50

(21) International Application Number:

PCT/US2004/020992

(22) International Filing Date: 1 July 2004 (01.07.2004)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

60/484,308 60/524,083 3 July 2003 (03.07.2003) US 24 November 2003 (24.11.2003) US

(71) Applicant (for all designated States except US): BIOGEN IDEC MA INC. [US/US]; 14 Cambridge Center, Cambridge, MA 02142 (US).

(72) Inventors; and

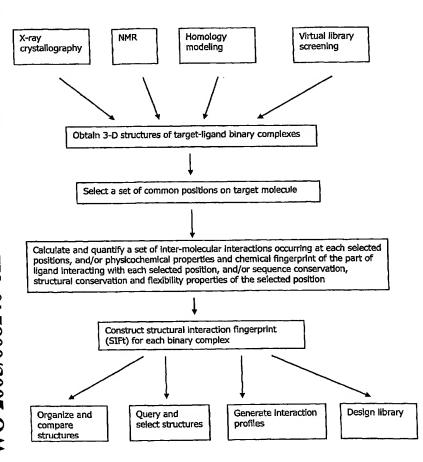
(75) Inventors/Applicants (for US only): SINGH, Juswinder [GB/US]; 94 Heritage Avenue, Ashland, MA 01721 (US).

CHUAQUI, Claudio [CA/US]; 30 Chandler Street, Apt. #1, Somerville, MA 02144 (US). ZHAN, Deng [CA/CA]; 65 Old Meadow Lane, Markham, Ontario L6C 2L6 (CA).

- (74) Agent: FOX, Harold, H.; Steptoe & Johnson LLP, 1330 Connecticut Avenue NW, Washington, DC 20036 (US).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH,

[Continued on next page]

(54) Title: STRUCTURAL INTERACTION FINGERPRINT (SIFt)



(57) Abstract: Disclosed is a method for representing and analyzing 3D target molecule-ligand intermolecular interactions. The method generates structural interaction fingerprints (SIFts) that convert three-dimensional structural interaction information into linear information strings that contains a plurality of information blocks; each of which in turn containing a plurality of information units. By assigning to each information unit a calculated value to represent the characteristic of a set of intermolecular interactions occurring at each selected position (i.e., a position on the target molecule at which intermolecular interaction occurs), a SIR of the target molecule-ligand complex is constructed.

#### 

GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

#### Published:

 without international search report and to be republished upon receipt of that report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.